

USSR

UGODCHIKOV, A. G., KOROTKIKH, Yu. G., Nekotorye Metody Resheniya na ETSVM
Fizicheski Nelineynykh Zadach Teorii Plastin i Obolochek, Naukova Dumka
Press, Kiev, 1971, 219 pages.

Chapter 7. Use of Variation-Difference Methods	186
1. Variation Principles in the Theory of Plasticity	186
2. The Planar Problem	188
3. Stability of Thin Plates	204
Bibliography	214

4/4

- 109 -

USSR

UDC 532.516

KOROTKIN, A. I., ROZHDESTVENSKIY, K. V.

"Experimental Study of Supercritical Flow Over a Circular Cylinder"

Tr. Leningr. korablestroit. in-ta (Works of Leningrad Shipbuilding Institute),
1970, No. 69, pp 57-63 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9B567)

Translation: The hydrodynamic characteristics of the transverse flow over a cylinder of circular cross section with relative dimensions $L/d = 5$ with straight discs at Reynolds numbers $R = Vd/\nu = 5 \cdot 10^5 - 2 \cdot 10^6$ were investigated. The tests were conducted in a wind tunnel with a degree of turbulence $\epsilon = 0.4\%$. It was shown that the coefficient of frontal resistance determined by integrating the pressure diagram in several cross sections changes along the span with a certain periodicity. The presence of periodicity along the span is confirmed also in the visualization of flow with the aid of long silky fibers fastened to the cylinder at its leading critical line so that the longitudinal dimension of a cell is 1-1.5 the diameter of the cylinder. The three-dimensional character of flow over the cylinder is explained by the authors by the periodic nonuniformity of turbulent separation along the span which is a consequence of the three-dimen-

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USSR

KOROTKIN, A. I., ROZHDESTVENSKIY, K. V., Tr. Leningr. korablestroit. in-ta, 1970,
No. 69, pp 57-63

sionality of the transition region of the laminar layer into a turbulent layer. It is hypothesized on this basis that the three-dimensional effects should disappear with a shortening of the length of the transition zone (with an increase in the Reynolds number, the initial turbulence of the flow or the roughness of the cylinder surface). Measurements of pressure pulsations in a median cross section on the surface of the cylinder showed that characteristic frequencies corresponding to $S = 0.2$ occur in hypercritical flow regimes of the cylinder at the end portion of the surface of the cylinder in the laminar section and higher frequencies occur in the zone of transition and the turbulent regime in the boundary layer, where the Strouhal number reaches the value $S = 0.4$. A. S. Ginevskiy.

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- 97 -

1/2 007

UNCLASSIFIED

PROCESSING DATE--11DEC70

TITLE--STRAIGHT TOOTHED CONICAL SMALL MODULE PAIRS WITH BARREL SHAPED
TEETH -U-

AUTHOR--KURTKIN, V.I.

COUNTRY OF INFO--LSSR

SOURCE--MESCH., PRIBRY I SISTEMY UPRAVLENIYA, NO 3, 1970, PP 56-58
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--GEAR, MECHANICAL POWER TRANSMISSION DEVICE, MATHEMATIC
EXPRESSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PRJXY FICHE NO----FD70/605040/FC9 STEP NC--UR/0445/70/000/0037005370055

CIRC ACCESSION NO--APC142712

UNCLASSIFIED

2/2 COT

UNCLASSIFIED

PROCESSING DATE -- 10/20/01

CIRC ACCESSION NO--AP0142712

ABSTRACT/EXTRACT--(U) GF-D- ABSTRACT. THE BASIC FUNCTION OF STRAIGHT TOOTHED CONICAL TRANSMISSIONS WITH A MODULE OF 0.3+175 MM IS, AS A RULE, NOT TO TRANSMIT POWER BUT TO TRANSMIT SMOOTH ROTATION FROM ONE LINK TO ANOTHER. AN IDEAL FIT TO A CONICAL PAIR CANNOT BE OBTAINED; HENCE THERE MUST BE FOUND TO COMPENSATE FOR FITTING ERRORS. THIS PROBLEM WAS SOLVED IN A RADICAL MANNER BY THE APPEARANCE OF TEETH THAT WERE BARREL-SHAPED WITH RESPECT TO TOOTH LENGTH IN STRAIGHT TOOTH CONICAL PAIRS. THE ARTICLE DEALS WITH A METHOD FOR OBTAINING BARREL-SHAPED TEETH WITHOUT THE USE OF SPECIAL MECHANISMS, SPECIAL ADJUSTMENT OF THE GEAR-SHAPING MACHINE BEING PROVIDED FOR IN ACCORDANCE WITH THE EXTENT OF THE REQUIRED BARREL-SHAPE AND THE POSITION OF THE CONTACT SPOT ALONG THE TOOTH LENGTH. THIS METHOD HAS BEEN EXTENSIVELY TESTED ON MEDIUM MODULE PAIRS WITH FAVORABLE RESULTS. IT OPENS UP A REAL OPPORTUNITY FOR THE USE OF BARREL-SHAPED TEETH IN SMALL MODULE CONICAL PAIRS. THE ESSENCE OF THE PROCESS IS BEING DISCUSSED ELSEWHERE, THE PRESENT PAPER DEALS WITH SOME QUESTIONS CONNECTED WITH THE EMPLOYMENT OF BARREL-SHAPED TEETH IN CLINICAL SMALL MODULE STRAIGHT TOOTH TRANSMISSIONS. AMONG THE QUESTIONS DISCUSSED ARE SELECTION OF THE CALCULATED FORCE OF CONTACT P SUBMITTED IN THE RUNNING IN OF GEARS OF VARIOUS MATERIALS, AND DETERMINATION OF THE OPTIMAL BARREL-SHAPE VALUES C SUED OF THE TEETH.

UNCLASSIFIED

USSR

UDC 620.172.751.12

DEYCH, A. SH., KOPEL'MAN, L. A., KOROTKIN, V. V., Leningrad Polytechnical Institute imeni Kalinin

"Determining the Parameters of the True Stress-Strain Diagram in the Temperature Range From +25 to -196°C"

Moscow, Zavodskaya laboratoriya, No. 11, 1971, pp 1371-1379

Abstract: The parameters of the true hardening curve in the temperature range from +25 to -196°C were determined for VMSt. 3sp steel, with a grain size of 5.5. The chemical composition of the steels is 0.17% C, 0.46% Mn, 0.15% Si, 0.05% Cr, 0.09% Ni, 0.17% Cu, 0.029% S and 0.017% P. The calculated values of the true stresses and deformations for all samples tested are graphed. It is shown that over the entire temperature range studied the power relationship for the strengthening law is maintained and the parameters of the true stress-strain diagram can be determined by the method used. The effect of scale appears only in the deformation strengthening index, where in testing samples of diameter 1.2 and 5 mm, there appeared some increase in the deformation strengthening index for samples of the larger diameter.

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- 81 -

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UDC 546.799.94

USSR.

ZVARA, I., BELOV, V. Z., DOMANOV, V. P., KOROTKIN, V. I., CHIELOKOV, L. P.,
SHALAYEVSKIY, M. R., SHCHEGOLEV, V. A., and YUSSONNIA, M.

"Chemical Isolation of Kurchatovium"

Leningrad, Radiokhimiya, Vol 14, No 1, 1972, pp 119-122

Abstract: Earlier it was shown that during the irradiation of ^{242}Pu with ^{22}Ne ions with energies of 113-119 mev (for $z = 104$), a short-lived, spontaneously fissionable nuclide was detected whose chemical characteristics corresponded to the characteristics of kurchatovium (Ku). The half lives of ^{259}Ku and ^{260}Ku are about 4.5 and 0.1 sec respectively. For these experiments the target film of plutonium oxide ($95\% \text{ }^{242}\text{Pu}$) with a density of 0.8 mg/cm^2 was irradiated with ^{22}Ne ions with an energy of 119 mev. This produced a maximum yield for the reaction $^{242}\text{Pu} + ^{22}\text{Ne} \rightarrow ^{259}\text{Ku}$. Gaseous nitrogen was passed over the surface of the target then mixed with small amounts of TiCl_2 and SOCl_2 . The slightly volatile tetrachlorides of the radioactive products formed were separated on a chromatograph. A Ge-Li ^{27}Al -radiation detector was used to analyze the gas at different points along the column. The isotopes ^{170}Lu , ^{171}Lu , ^{240}V , ^{242}V (the latter the product of ^{22}Ne reaction with the Al of the target base), ^{242}Ca , $^{1/2}$

USSR.

ZVARA, I., et al., Radiokhimiya, Vol 14, No 1, 1972, pp 119-122

and ²⁴⁶Cf (the latter two being products of a transfer reaction). It was found that Na, Cs, Ca, Sr, the lanthanides, Np, Pu, Ru, Rh, and Cd are adsorbed only at significantly higher temperatures than Hf (and also the actinides Ku) whereas the chlorides of In, Sn, Nb, Mo, and Tc are adsorbed only at lower temperatures. Photographs of the expected area of Hf adsorption show tracks of fission products which must be those of the ²⁵⁹Hf with a $t_{1/2} = 4.5$ sec.

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- 15 -

USSR

UDC 543.53

KOROTKIN, Yu. S.

"Separation of Rare Earth and Transplutonium Elements by Partition Chromatography on Tetrabutylhypophosphoric Acid"

Leningrad, Radiokhimiya, Vol 15, No 4, 1973, pp 625-626

Abstract: The chromatographic separation of a series of title elements was attempted on cellulose columns with 0.5 M tetrabutylhypophosphoric acid as the stationary phase. Following findings are noteworthy: scandium follows yttrium, with some overlap; silver remains on the column; Am, Cm, and Eu are eluted together. Using this method it was possible to isolate Zr and Hf containing less than 0.1% Sc.

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UDC 546.799.94

ZVARA, I., BELOV, V. Z., DOMANOV, V. P., KOROTKIN, Y., CHELNOKOV, L. P., SHALAYEVSKIY, M. R., SHCHECOLEV, V. A., and YUSSONNUA,

"Chemical Isolation of Kurchatovium"

Leningrad, Radiokhimiya, Vol 14, Vyp 1, 1972, pp 119-122

Abstract: Earlier it was shown that during the irradiation of ^{242}Pu with ^{22}Ne ions with energies of 113-119 mev (for $Z = 104$), a short-lived, spontaneously fissionable nuclide was detected whose chemical characteristics corresponded to the characteristics of ekahafnium (Ku). The half lives of ^{259}Ku and ^{260}Ku are about 4.5 and 0.1 sec respectively. For these experiments the target film of plutonium oxide (95% ^{242}Pu) with a density of 0.8 mg/cm² was irradiated with ^{22}Ne ions with an energy of 119 mev. This produced a maximum yield for the reaction $^{242}\text{Pu} (^{22}\text{Ne}, 5n) ^{259}\text{Ku}$. Gaseous nitrogen was passed over the surface of the target then mixed with small amounts of TiCl_4 and SOCl_2 . The slightly volatile tetrachlorides of the radioactive products formed were separated on a chromatograph. A Ge-Li γ -radiation detector was used to analyze the gas at different points along the column. The isotopes ^{170}Hf , ^{171}Hf , ^{144}Se (the latter the product of ^{22}Ne reaction with the Al of the target base), ^{242}Cm and ^{246}Cf (the latter two being products of a transfer reaction). It was
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USSR

ZBARA, I., et al., Radiokhimiya, Vol 14, Vyp 1, 1972, pp 119-122

found that Na, Cs, Ca, Sr, the lanthanides, Np, Pu, Ru, Rh, and Pd are adsorbed only at significantly higher temperatures than Uf (and also the ekahafnium Ku) whereas the chlorides of In, Sn, Nb, Mo, and Tc are adsorbed only at lower temperatures. Photographs of the expected area of Ku adsorption show tracks of fission products which must be those of the ^{259}Ku with a $t_{1/2} = 4.5$ sec.

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- 49 -

USSR

UDC 616.882-08:616.12-78]-092.9-07:616-004.9-074

POGOSOVA, A. Z., KOROPKINA, S. N., and CHERNYAK, V. M., Biochemistry Laboratory, and Center of Experimental Research, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR

"Metabolism of Dogs Revived by Extracorporeal Circulation"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5, Sep/Oct 70, pp 28-31

Abstract: Dogs were revived after heartbeat had stopped for 5 and 17 min. by two types of extracorporeal circulation (circulation of donor blood and coronary carotid perfusion). Various metabolic indices were monitored, including electrolyte (K and Na) content, sugar, lactic and pyroracemic acid, and SH group content. In the state of clinical death, the K and Na concentrations were practically unchanged, the lactic acid content was substantially increased and the pyroracemic acid and sugar levels were somewhat elevated. Lactate dehydrogenase activity and SH group content dropped sharply. With coronary-carotid perfusion, the lactic and pyroracemic acid concentrations in the blood rose 30 min after perfusion had been started. Lactate dehydrogenase activity and SH group content were somewhat elevated. After 1 hour, when the animals were switched over to their own blood circulation, the lactic acid and blood sugar levels dropped slightly but remained 1/2

USSR

POGOSOVA, A. V., et al, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5, Sep/Oct 70, pp 28-31

at almost twice the initial levels. The pyroracemic acid level remained practically unchanged. Lactate dehydrogenase activity dropped and remained below that measured during clinical death. All indices monitored returned to normal within 24 hours after clinical death. After 30 min resuscitation by donor blood perfusion, the lactic acid level was relatively high (but lower than had been noted in animals revived by coronary-carotid perfusion). The SH group concentration varied only slightly. The pyroracemic acid content was slightly above that of the controls but considerably lower than the corresponding levels found in the other group of test animals. After 1 hour the pyroracemic and lactic acid contents, although still shifting toward normal, were 60% above the starting values. The sugar content remained unchanged. It was concluded that there is a breakdown in the oxidation processes, as indicated by the enhanced lactic and pyroracemic acid levels of the blood. The sharp drop in SH groups indicates that during clinical death there is a change in the tertiary structure of albumin.

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1/2 G18 UNCLASSIFIED PROCESSING DATE--ZC010970
TITLE--THE EFFECT OF PREDNISOLONE ON THE METABOLISM OF ISOLATED HUDDING-RUS
HEART IN PERfusion WITH THE AID OF A DONOR RAT
AUTHOR--(04)-MUSCA, I.M., NIKULIN, V.I., KOROTKINA, R.N., SHORINA, L.V.

COUNTRY OF INFO--USSR

SOURCE--SYLLETTEN EKSPERIMENTAL'NOY BIOLOGII I MEDICINSKIY 1970, VOL. 49,
NR 6, PP 45-47
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PREDNISONE, HEART, LACTATE DEHYDROGENASE, TRANSAMINASE, SULFOR
ISOTYPE, CHEMICAL LABELLING, METHIONINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0706

STEP NO--UR/0219/70/04970667C04970147

CIRC ACCESSION NO--4P0131325

UNCLASSIFIED

272 018

UNCLASSIFIED

PROCESSING DATE--20 NOV 70

CIRC ACCESSION NO--APOL31305
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CONDUCTED STUDIES OF THE EFFECT OF PREDNISOLONE ON THE SYNTHESIS OF TOTAL CONTRACTILE AND SARCOPLASMATIC PROTEINS BY THE INCORPORATION OF S-PCTHE-35 LABELED METHIONINE OF DIFFERENT REGIONS OF ISOLATED HUQUETOUS HEART IN ITS PERfusion WITH THE AID OF A LIVE DONOR. THE PREDNISOLONE EFFECT WAS ALSO INVESTIGATED ON THE ACTIVITY OF A NUMBER OF ENZYMES OF THE BLOOD PLASMA AND MYOCARDIUM OF THE PERFUSED HEART. PREDNISOLONE WAS INTRODUCED IN A DOSE OF 10 MG-KG OF BODY WEIGHT EVERY FIVE MINUTES FOR ONE HOUR. INHIBITION OF THE SYNTHESIS OF SARCOPLASMATIC PROTEINS OF ALL REGIONS OF THE ISOLATED HEART WAS NOTED; THE SYNTHESIS OF CONTRACTILE PROTEINS DID NOT CHANGE. IN THE BLOOD PLASMA 90 MINUTES AFTER PERfusion THE ACTIVITY OF LACTIC DEHYDROGENASE AND GLUTAMIC OXALOACETIC TRANSAMINASE INCREASED IN COMPARISON WITH THAT AT THE BEGINNING OF PERfusion. THE ENZYMATIC ACTIVITY IN THE PERFUSED HEART AND DODOR HEART DID NOT CHANGE.
FACILITY: A. V. VISHNEVSKY INSTITUTE OF SURGERY
OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THERMAL DIFFUSION SEPARATION OF A MIXTURE OF HIGH MOLECULAR WEIGHT
ISOPARAFIN AND HYBRID PARAFFIN CYCLOPENTANE HYDROCARBONS -U-
AUTHOR-(05)-SERGIYENKO, S.R., ERNEPESOV, D.N., ERNEPESOV, K.P.N., KOROTKIY,
A.G., MELIKADZE, L.D.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1159-61.

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL SEPARATION, PARAFFIN WAX, CYCLOPENTANE, THERMAL
DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1125

STEP NO--UR/0020/70/190/005/1159/1161

CIRC ACCESSION NO--AT0119979

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AT0119979
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FRACTIONATING EFFECTIVITY OF A H SUB2 O COOLED, THERMAL DIFFUSION APP. HAVING HOT AND COLD WALL TEMPS. OF 125 AND 27DEGREES, RESP., AND CONSISTING OF 2 COAXIAL 1000 MM COLUMNS, THE OUTER 50 MM IN INTERNAL DIAM., SEPD. FROM THE INNER BY A 0.4 MM GAP CONTG. SPIRALLED WIRE, AND EQUIPPED FOR SAMPLE REMOVAL WITH NEEDLE VALVES AT 200 MM INTERVALS, WAS 99.1, 100.2, AND 105.4PERCENT AFTER 8, 10, AND 12 HR DIFFUSION FOR A MIXT. OF EQUAL VOLs. OF CETANE AND DECALIN (I), SINCE CIS-I AND TRANS-I BEGAN TO SEP, AFTER 10 HR. FRACTIONATION FOR 12 HR OF A B. 350-450DEGREES CHELEKNE SEA PETROLEUM FRACTION HAVING RATIO (A-C) OF ISOPARAFFIN PARAFFIN CYCLOPENTANE HYDROCARBONS 65:35. AV. MOL. WT. (BAR M) 280, AV. NO. (K SUB0) OF RINGS-MOL. 1.2, D PRIME20 0.8303, AND N PRIME20 SUBD 1.4585 YIELDED A FIRST FRACTION HAVING A-C 90.5:9.5, M 261, K SUB0 0.3, D PRIME20 0.7939, AND N PRIME20 SUBD 1.4438, A FOURTH FRACTION HAVING A-C 82:18, BAR M 286, K SUB0 0.7, D PRIME20 0.8102, AND N PRIME20 SUBD 1.4504, AND A TENTH FRACTION HAVING A-C 21.5:78.5, M 296, K SUBD 3.6, D PRIME20 0.9139, AND N PRIME10 SUBD 1.4840. IN THE ORIGINAL MEXT. AND THE RESP. FRACTIONS, THE NO. OF ME GROUPS-MOL. WAS 4.4, 34.6.7, AND 4.8 AND THE NO. OF CH SUB2 GROUPS-MOL. WAS 6.9, 13.6, 10.2, AND 1.2. COMBINED FRACTIONS 2, 3, AND 4 WERE REFRACNATED TO PREP. NEARLY PURE ISOPARAFFINS. FACILITY: INST. KHM., ASHKHABAD, USSR.

UNCLASSIFIED

KOROTKIY M.G.

AAO 044264

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Document,

270

243039 CONTACTLESS TWO-POLE SYNCHRONOUS ELECTRICAL
MACHINE is simplified and its active materials
are better utilized. The machine housing (1) carries
the three-sectioned stator core (2) and its distributed
winding (3). The exciter winding (4) is placed between
the outer sections of the stator. The magnetic core
of the rotor (9) is built from ellipse-shaped laminations
which are embedded in aluminium casting in a
position which is tilted to the axis of rotation. The
rotor (8) is then mounted on a non-magnetic shaft (5).
Damping or starting winding (10) is obtained by casting
aluminium bars in the apertures of laminations. The
construction reduces rotor losses and increases the flux
density under the outer core sections of the stator,
it also reduces magnetic leakage.

9.12.66 as 1118945/24-7. I.F. ZASLAVSKIY et al (30.9.69)
Bul 16/5.5.69. Class 21d². Int.Cl. H 02k.

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AUTHORS: Zaslavskiy, I. F., Korotkiy, M. G., Libov, I. Ye.

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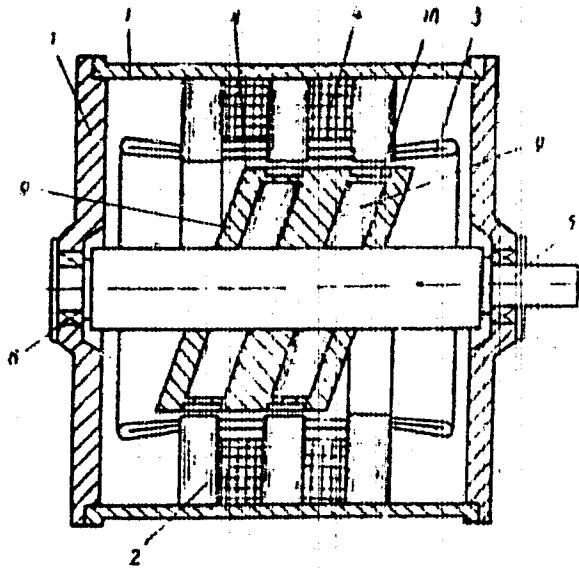
Vays, A. M.

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APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002201510011-8"

USSR

UDC 612.014.426

MIKHAYLOVA-LUKASHEVA, V. D., SKRIPAL', A. V., MEL'NIKOV, V. P., KORONKEV, V. P.,
NAYMITSENKO, L. V., Gerontology Section of the Belorussian SSR Academy of
Sciences

"Study of the Effect of Weak Electromagnetic Field Gradients on Man"

Minsk, Doklady Akademii nauk, BSSR, 1972, Vol 16, No 12, pp 1147-1149

Abstract: The gerontology section jointly with the Electronics Laboratory of the Academy of Sciences Belorussian SSR has begun studies of the effect of weak electromagnetic field gradients on the functional activity of a number of systems of the organism of man and various animals. To detect the reaction of man and animals to weak electromagnetic fields, pulses of exponential shape were used with a frequency corresponding to the rhythms of the physiological processes characterizing the functional state of the organism ($f = 0.5-30$ hertz) and a frequency of 200-400 hertz corresponding to the rhythms of the excited receptors. The goal was to detect the reaction to the weak electromagnetic field gradients not only of the coherent electromagnetic radiation but also energy gradients of the interference type, white noise, which was created in the 50 hertz to 6 megahertz band. Electroencephalograms, electrocardiograms, phonocardiograms, rheovasograms, plethysmograms and recordings of the arterial pressure and respiration were taken. Electromagnetic energy

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MIKHAYLOVA-LUKASHEVA, V. D., Doklady Akademii nauk, BESR, 1972, Vol 16, No 12,
pp 1147-1149

gradients from 0 to $27 \cdot 10^{-24}$ joules were created. The experimental setup and
means of calculating the gradients are described in detail in this paper and
the variations in the physiological functions will be discussed in later
reports.

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Acc. Nr:

AP0037015**K**

Ref. Code: UK 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol. 56,
Nr 2, pp 254 - 260ON RECRETORY ORIGIN OF PYLORIC PEPSINOGEN
AND AMYLASE

Korot'ko, G. F.; Kamakin, N. F.; Inamova, K. B.

Dept. of Normal Physiology, Kalinin's State Medical Institute, Andizhan

Increase of pepsinogen and amylase contents in the blood after excluding of the renal way of their excretion from the organism and clamping of the pancreatic ducts, was shown to intensify excretion of these enzymes through pyloric secretion and urine. Decreasing blood contents of the pepsinogen after gastrectomy and subtotal gastric resection entails lowering of the enzymes excretion by pyloric glands and kidneys. The data confirmed by high positive correlation coefficient between blood contents of the pepsinogen and amylase and their excretion by pyloric glands, indicate secretory origin of these enzymes (their major part anyway) in the pyloric secretion.

D. n.

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REEL/FRAME
19721951

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1/2 022
TITLE--ON PROTEINS OF BLOOD SERUM TYPICAL OF THE NORMAL AND MALIGNANT
GROWTH -U-
AUTHOR--KOROTKORUCHKU, V.P.

UNCLASSIFIED

PROCESSING DATE--02OCT70

COUNTRY OF INFO--USSR

SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 62, NR 2, PP 207-216

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROTEIN, BLOOD SERUM, ALPHA GLOBULIN, GAMMA GLOBULIN, CANCER,
BETA GLOBULIN, BURN, RABBIT, EMBRYOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1680

STEP NO--UR/0300/T0/042/002/0207/0216

CIRC ACCESSION NO--AP0106426
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106426

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOST IMPORTANT LITERARY DATA ARE PRESENTED AS TO ALPHA SUB2 SLOW GLOBULINS OF BLOOD SERUM OF ANIMAL AND MAN WITH THE NORMAL AND MALIGNANT GROWTN. THE MORE DETAILED EVIDENCES ARE GIVEN CONCERNING THE OBSERVED VARIANT OF GAMMA GLOBULIN IN BLOOD SERUM WITH CANCER, ITS PHYSICOCHEMICAL PARAMETERS ARE CITED, SOME BIOLOGICAL PROPERTIES ARE DESCRIBED AS WELL. IN SUCH A SENSE THE DATA ARE PPRESENTED OF GAMMA GLOBULIN, FOUND IN THE SERUM OF COWS IN CALF AND IN BETA GLOBULIN OF CARCINOMATOUS AND NEWLY BURN RABBITS AND RABBIT EMBRYOS. THE APPEARANCE OF PROTEINS TYPICAL OF THE NORMAL AND MALIGNANT GROWTH IS DISCUSSED WITH RESPECT TO GENOME REPRESSION AND DEREPRESSION.

UNCLASSIFIED

Acc. Nr: AP0047315

Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichnyi Zhurnal, 1970,
Vol 42, Nr 1, pp 16-19

**TRANSPORT INTO CYTOPLASM OF NUCLEAR DNA SIMILAR TO RNA
IN THE PROCESS OF LIVER REGENERATION
AND CHEMICAL HEPATOCARCINOGENESIS**

O. M. Platonov, V. P. Korotkovichko, A. S. Polishchuk, V. G. Pinchuk

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Institute of Experimental and Clinical Oncology, Ministry of Public Health,

Ukrainian SSR, Kiev

Summary

The transfer of nuclear RNA into the liver cytoplasm in normal rats was studied 24 hrs after partial hepatectomy and in the process of chemical hepatocarcinogenesis by the method of hybridization of nuclear RNA (D-RNA-1 and D-RNA-2) with DNA at the presence of non-labelled RNA.

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19790833

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It is shown that in all the cases D-RNA-1 is presented in cytoplasm by a considerable amount of the hybridizable kinds of RNA.

The cytoplasmic RNA of the rat normal liver is a weak competitor for D-RNA-2 for corresponding cytrones of DNA.

In the process of regeneration and hepatocarcinogenesis there observed a considerable amount of RNA capable of competing with D-RNA-2 for places on DNA.

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19790834

b7c

Acc. Nr. DP 0055660Abstracting Service:
CHEMICAL ABST.Ref. Code
61'0454

[12029] reaction of polystyryllithium with poly(alkyl methacrylates) and synthesis of the graft copolymers of given composition and structure. Andreeva, G. A.; Kozakov, A. A. (Inst. Vysokomol. Soedin., Leningrad, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 95-105 (Russ.). The grafting of poly(alkyl methacrylates) (I) (alkyl is Me, Bu, Ph, or *tert*-Bu) with polystyryllithium (II) gives $[-\text{CH}_2\text{CMe}(\text{COMe})(\text{OEt})\text{CHPhCH}_2-\text{CHPh}-]$, which eliminates MeOLi becoming $[-\text{CH}_2\text{CMe}(\text{COCHPhCH}_2\text{CHPh}-)]$. The condensation of III with a 2nd II mol. gives $[-\text{CH}_2\text{CMe}(\text{C(OEt)})(\text{CHPhCH}_2\text{CHPh}-)(\text{CHPh}-)]$, which is hydrolyzed to $[-\text{CH}_2\text{CMe}(\text{C(OH)})\text{CHPhCH}_2\text{CHPh}-]$. In thermodynamically good solvents [tetrahydrofuran for all I, PhMe for I (alkyl is *tert*-Bu or Ph)] the reaction rate is diffusion controlled and there is an induction period. In a thermodynamically poor solvent [PhMe for I (alkyl is Me or Bu)] the reaction follows a 2nd order equation; the ester groups of I are shielded by the coiled polymer melt. CPJR

Y/REEL/FRAME
19840966

CB 1

KOROTKOV, A. D.

Spacecraft
Engineering

S0-3P-2 74340

28 MAY 71

QUALITY EVALUATION OF RELIATIVE PROCESSES IN SPACE VEHICLE CONTROL

A. N. Korotkov, V. A. Tsvetkov,
V. P. Salnikov, M. (Director)
I. Ye. Chubashev (Executive)

pp. 1-1

Abstract: The problem of quantitative evaluation of capacity for work by a human operator in a space vehicle control system is currently quite important. Such an evaluation is required for determining the level of the operator's training, to predict his reliability, to carry out professional selection, etc. The proposed method for evaluating the work capacity of a human operator is based on probability-theoretical methods and the mathematical theory of linear differential transforms. The method takes into account human reliability in the course of professional training and makes it possible to determine the probability of successful implementation of a task in the course of one control cycle under both normal and emergency flight conditions. The high informational and emergency flight conditions. The high information yield of this method is supported by a number of experiments.

The creation of modern and promising systems for controlling space vehicles is impossible without organizing operational relationships among the functions of mechanisms, apparatus, equipment and other "nonliving" devices, on the one hand, and the human being controlling them, on the other. At whatever control level the man-operator may be situated, he must solve information-logic problems and appropriately implement carefully calculated reactions to the control organs.

Heat, Combustion, Detonation

USSR

K UDC 662.813.2+536.46

BELYAYEV, A. F., SUKOYAN, M. K., KOROTKOV, A. I., SULINOV, A. A.

"Concerning the Consequences of the Penetration of Combustion Into a Single Pore"

Novosibirsk, Fizika Gorenija i Vzryva, No 2, June 1970, pp 166-171

Abstract: It has been shown in other references that the penetration of combustion into a two-dimensional unit pore (crack) of powder or high explosive brings about, under certain conditions, excess pressure in it. The initial effect exerted by the excess pressure upon the sides of the crack can, under certain conditions, bring about enlargement of the crack, which condition is manifested in a depth increase. In the article are set forth results of measurement and calculation of the value of excess pressure; in addition, consideration is given to special features of the growth of burning cracks. The value of the excess pressure in an undeformed two-dimensional pore is obtained. The pressure increase in a burning pore undergoing deformation is calculated. The growth of burning cracks acted upon by excess pressure is examined.

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USSR

UDC 629.7.036.54---66:536.46

SULIMOV, A. A., and KOROTKOV, A. I.**"The Combustion of Porous Substances"**

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniiya i Gaz. Dinamiki Dispersn. Sistem, 1972 -- Sbornik (11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Works), 1972, pp 40-41 (from Referativnyy Zhurnal -- Aviatsionnyye i Rakетnyye Dvigateli, No 1, 1973, Abstract No 1.34.146 Resumé)

Translation: An experimental study is conducted of the rules governing the layer-by-layer combustion of porous systems at constant atmospheric pressure (ammonium perchlorate with a combustible or catalytic additive, pyroxylin). A study was made of the relationship of the mass rate and critical diameter of combustion to the relative density of the substance (σ_{sub}); measurements were made of the temperature distribution in the condensed phase and in the gas phase, as well as of the pressure change in the base part of a burning porous charge. It was established that unlike the case of fusible secondary explosives, in this case the mass rate of combustion increases, and the critical diameter of combustion decreases. The entire aggregate of the data obtained in the project is explained from a single point of view, according to which the essential
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SULIMOV, A. A., and KOROTKOV, A. I., 11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972, -- Collection of Works), 1972, pp 40 -41

role in the combustion of the investigated systems is played by convective heat transfer caused by the penetration of gaseous combustion products into the pores. A model of the combustion of a porous system is discussed, with account taken of distortion of the surface and nonunidimensionality of the combustion zone.

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- 19 -

USSR

UDC 536.46+662.217

FROLOV, YU. V., DUBOVITSKIY, V. F., KOROTKOV, A. I., KOROSTELEV, V. G., Moscow

"Convective Combustion of Porous Explosives"

Novosibirsk, Fizika gorenija i vzryva, Vol 8, No 3, 1972, pp 368-378

Abstract: A study was made of some of the steps in the development of the process of combustion of porous systems of limited length. The experiment in the development of convective combustion was carried out primarily in a constant-pressure device with a free volume of two liters equipped with a peephole for optical recording of the process, a series of electric lenses for the thermocouples and a piezoelectric pressure-sensitive sensor. A mixed condensed stoichiometric system of polystyrene and ammonium perchlorate was used. The general nature of the development of the combustion processes along the length of the porous sample as a function of its length with different porosity is plotted. Under other equal conditions, the general level of the propagation rate of the convective combustion increases as the porosity of the specimen increases. Under the effect of a critical pressure drop it is possible to isolate three characteristic regimes in which the predominant one is: a) the filtration process (the initial segment of the charge); b) the process of development of convective combustion and c) the effect of creating a counter pressure as a result of compression of the filtered gas filling the pores in advance. The presence and
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USSR .

FROLOV, YU. V., et al., Fizika gorenija i vzyryva, Vol 8, No 3, 1972, pp 368-378

commensurableness of the indicated regimes depends primarily on the length, porosity and physical-chemical properties of the sample and also on the initial pressure drop in the pores and the surrounding volume.

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- 75 -

USSR

UDC: 536.46:533.6

FROLOV, Yu. V., KOROTKOV, A. I., LEYPUNSKIY, O. I., POKHIL, P. F.

"Burning of Aluminum in the Composition of Heterogeneous Condensed Systems"

V sb. Fiz. Aerodispersn. sistem. Vyp. 3 (Physics of Aerodisperse Systems —collection of works, No 3), Kiev, Kiev University, 1970, pp 126-137
(from RZh-Mekhanika, No 7, Jul 71, Abstract No 78805)

Translation: A brief survey is presented of previously completed works on burning of aluminum. Work on studying burning of the metal and the principles which govern burning of metallized heterogeneous condensed compositions is done on a semiclosed installation and in a constant-pressure device. The pressure interval is 10-100 atmospheres. The authors consider the effect which various factors (pressure, agglomeration, etc.) have on burning of aluminum in a composition of condensed systems. An experimental formula is derived for determining the time of burning of aluminum particles $\tau_b = 0.67d^{1.5}/a_c^{0.9}$, where d is the diameter of the particles in microns; a_c is the relative concentration of oxygen-containing active compounds H_2O+CO_2 in percent. Bibliography of thirteen titles.

Authors' abstract.

1/1

USSR

UDC: 536.468

YERMOLAYEV, B. S., KOROTKOV, A. I., FROLOVE, Yu. V., Moscow

"Regularities of Combustion of Condensed, Stratified Systems"

Novosibirsk, Fizika Gorenija i Vzryva, Vol. 6, No. 3, Sep 70, pp. 277-285

Abstract: This work presents an experimental study of the structure of the flame and the regularities of combustion of multilayered systems. The dependence of combustion rate on pressure, layer thickness, type and relationship of components is studied. The results produced are analyzed within the framework of the thermal theory of combustion.

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1/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EXCITATION FUNCTION OF THE 6 PRIME3 P SUBO METASTABLE LEVEL OF
MERCURY -U-
AUTHOR--KCRUTKOV, A.I.

COUNTRY OF INFO--USSR *K*

SOURCE--OPT. SPEKTRCSK. 1970, 28(4), 641-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--MERCURY, PULSE EXCITATION, KINETIC ENERGY, ELECTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1656

STEP NO--UR/0051/T0/028/004/0641/0644

CIRC ACCESSION NO--AP0125278

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0125278

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ELEC. METHOD WAS USED TO STUDY THE EXCITATION FUNCTIONS FOR THE 6 PRIME3 P SUBO METASTABLE LEVEL OF HG, BASED ON THE RECORDING OF THE KINETIC ENERGY OF THE ELECTRONS WHICH UNDERGO TYPE II INELASTIC COLLISIONS WITH THE METASTABLE ATOMS. THE EXCITATION FUNCTIONS FOR THE 6 PRIME3 P SUBO YIELDS 6 PRIME3 S SUBO TRANSITIONS WERE USED TO SET UP THE EXCITATION FUNCTIONS FOR TYPE I IMPACTS, WHICH CORRESPOND TO THE 6 PRIME3 S SUBO YIELDS 6 PRIME3 P SUBO TRANSITION BY USING THE KLEIN ROSELAND RELATIONS (1921). TWO MAX. IN THE FINE STRUCTURE WERE OBSO. ON THE EXCITATION FUNCTION.

UNCLASSIFIED

KOROTKOV,

A.S.

JO: JPR/S 51279
14 June 73

MECHANISM OF SILICON AUTOCLAYITY DURING TRANSPORT IN SMALL INTERVALS

(see the "Influence of the Temperature on the Properties of Silicon Carbide," Sov. Atomnaya Promst., No. 1, 1959, p. 10; "Silicon Carbide," Sov. Atomnaya Promst., No. 2, 1959, p. 12-13)

[1-3] describe the silicon transport process using chlorine-carbonic acid treatment agents selected by us [4] to explain the existing experimental data did not give satisfactory results. The growth rates of the autoclindrical layer of silicon obtained by the calculation procedure for transport by the reaction:

$$Si + H_2O \rightarrow SiH_4 + 1/2 O_2$$

significantly exceed the experimental values at the same time as the calculation based on the assumption that the transport is realized using the reaction

$$Si + 2 HCl \rightarrow SiCl_4 + H_2$$

given values about an order smaller than the experimental values (Figure 1b).

The lack of correspondence of the theoretical and experimental results is difficult to explain beginning with the generally accepted criteria of the Sandvik process. Obviously, the existing concepts of the conditions of autoclavy do not take into account any cardinal peculiarities of the process.

The authors of reference [1] arrived at analogous conclusions in their research. Without indicating the lack of correspondence of the experimental and theoretical results, they could not explain a number of anomalous phenomena when obtaining autoclindrical layers of silicon by the Sandvik method. In spite of the numerous studies [5], the phenomena connected with autoclaving of the autoclindrical layer of silicon by the admixture entering into the substrate composition remain unexplained. There is no explanation from the point of view of existing concepts of the mechanism of autoclavy, and the anomalous differences in the transport coefficients of the elements of Group III which are similar with respect to properties (for boron $K = 0.5-0.8$; for aluminum $K = 0.05-0.07$) or Group V elements (for phosphorus and arsenic $K = 0.3-0.6$; for antimony $K = 0.005$).

Therefore, the conclusion regarding the necessity for reexamining the existing point of view of the autoclavy mechanism turns out to be valid.

KOROTKOV, A.S.

JO: JPRS 59279

14 June 73

(3)

UTILIZATION OF THE SANDWICH METHOD TO OBTAIN EPITAXIAL LAYERS OF SEMICONDUCTING MATERIALS

ALL-USSR CONFERENCE. Abstracts

[article by A. S. Korotkov, Yu. D. Chirkov, Yu. N. Tsvetkov, Sov. Tekhn. Polimery, Professory Instit. i Strukturna Polimernaya Politekhnicheskaya Stolov Polimernodostavki, Trudy Seminara, Rostov, Part 2, 1972, pp 33-37]

In this paper a study was made of obtaining semiconductor layers of Si_xN_y on Si, GaAs and GaAs heteroepitaxial layers of GaAs using the sandwich method [1].

As the transport agent for transporting the silicon we used SiCl₄ vapor and for the gas transport, the H₂O + H₂ system. The reactions regulating the transport process in this case are:



(1)



(2)

The thermodynamic and kinetic analysis of the reactions (1) and (2) which are considered [2-6] definite in the silicon transport process performed by us in reference [3] demonstrated the significant lack of correspondence of the calculated and experimental values. In order to explain this and a number of other anomalous phenomena noted during the experiments, we proposed a mechanism [6] taking into account the nature of the physical-chemical interaction of the substrate with the environment and assuming the presence of a liquid phase of defined composition on the surface of the plates.

Experimental Apparatus and Procedure

In order to obtain the epitaxial layers of silicon arsenide, a device was used with infrared heating. The heating by infrared lights lowers the amount of admixtures entering the reaction zone from the elements of the apparatus since these elements are at a lower temperature than the sandwich packet. In addition, the low inertia of the infrared heaters permits us to achieve the given process temperature in two or three minutes after switching the lamps.

USSR

UDC 621.317.757

KOMAROV, V. A., KOROTKOV, A. Z., KUZ'MIN, Yu. I.

"A Device for Analyzing the Checkout Characteristics of an Automatic Monitoring System"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 12, Apr 72, Author's Certificate No 334570, Division G, filed 24 Aug 70,
published 30 Mar 72, pp 182-183

Translation: This Author's Certificate introduces a device for analyzing the checkout characteristics of an automatic monitoring system. The device contains checkout characteristic and operation number memory units whose inputs are connected to recording units, while the outputs are connected through readout devices to circuits for comparing the checkout characteristics and operation numbers. Also incorporated in the device are a program unit whose output is connected to the set terminals of the checkout characteristic comparison circuits, and AND and NOT-AND elements. As a distinguishing feature of the patent, The reliability of analysis is improved by adding delay units, an operation number counter, and an adaptive majority element. The output of the operation number counter is connected

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USSR

KOMAROV, V. A. et al., USSR Author's Certificate No 334570

to the program unit, to the unit for recording the operation number, and to the operation number comparison circuit. The inputs of the adaptive majority element are connected to the outputs of the checkout characteristic comparison circuits, the set terminal is connected to the program unit, and the output is connected to one input of the first AND element. A second input of the AND element is connected to the output of the operation number comparison circuit, and the output is connected to the first inputs of the NOT-AND element and the second AND element. The second inputs of these elements are connected through the delay unit to an interrogate line, which is connected through a second delay unit to the inputs of the recording units.

2/2

- 9 -

USSR

UDC 621.314.1.001.57

KOROTKOV, B. A.

"Mathematical Simulation of Bridge Converters"

Izv. NII postoyan. toka (News of the Direct Current Scientific Research Institute), 1970, collection 16, pp 54-66 (from RZh-Elekrotehnika i Energetika, No 2, Feb 71, Abstract No 2 Ye131)

Translation: One version of converting a system of differential and algebraic equations describing the electromagnetic processes in a three-phase bridge converter under ordinary assumptions to a form convenient for solution on a digital computer is proposed. In addition, an approximate description of operation of the regulation and control systems of the converter is presented. Application of the formulas obtained is illustrated by two calculation examples. There are 4 illustrations and 1-entry bibliography.

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- 96 -

USSR

UDC 612.451:612.766.2

VYAZNITSKIY, P. O., PECHENEVSKIY, A. V., and KOROTKOV, D. I.

"Effect of Hypodynamia on the Nitrogen Balance and Glucocorticoid Activity of the Adrenal Cortex"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 8, 1972, pp 59-60

Abstract: Several biochemical parameters were measured in the urine of 16 human subjects who remained seated and inactive for 3 days in armchairs with the backs tilted at 90, 110, and 140°. The enforced hypodynamia distinctly increased the excretion of total nitrogen and creatinine, but only when the back of the chair was tilted at 90 and 140° (at 110° there was virtually no change). The 17-hydroxycorticosterone level tended to rise while the glucocorticoid activity of the adrenal cortex clearly decreased when the subjects' backs were at 90 and 140° angles. Thus, not only hypodynamia but the position of the trunk affected this function. The excretion of neutral 17-ketosteroids with urine increased in the subjects who sat in chairs with the backs tilted at 90 and 140°. These subjects also exhibited a distinct decrease in glucocorticoid activity of the adrenal cortex, i.e., the increase in excretion of neutral 17-KS may have been due solely to the intensification of androgen activity, a protective-adaptive reaction of the body to the negative nitrogen balance brought about by hypodynamia.

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- 44 -

USSR

UDC 533.69.01+533.662.013

KOROTKOV, M. M.

"Calculation of the Lift Coefficient of a Wing With a Rotary Flap"

Tr. Gor'kov. politekhn. in-ta (Works of Gor'kiy Polytechnical Institute), 1972,
Vol. 28, No. 5, pp 75-78 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 33299)

Translation: The semi-empirical method is proposed for calculating the lift coefficient of an underwater ring with a deflected flap. The method is based on the assumption that under deflection of the flap the lift of the portion of the wing that does not have a flap does not change and the portion of the wing with the flap receives an increase in lift proportional to the product of the angle of deflection of the flap and the derivative of the lift coefficient with respect to the angle of attack. An empirical formula obtained from analysis of experimental data is proposed for the coefficient of proportionality which is a function of the relative cord of the flap, the relative depression, the angle of attack of the cross section, and the aspect ratio of the wetted portion of the wing. V. I. Putyata.

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KOROTKOV, N. P.

TECHNICAL TRANSLATION

MTC-EN-21 340-72

ENGLISH TITLE:

Operational Characteristics of Type Rete-1 and Rete-2
Thermal-Resistive Sensors

Russian Title:

Операционные характеристики изотопных
термостойких сенсоров типа "Рет-1"
и "Рет-2"

AUTHOR:

G. M. Pradkin, V. M. Kondratenko,
A. I. Legechinskiy, N. P. Korotkov,
Yu. A. Kankov

SOURCE:

Radiationnaya Tekhnika, Study, Issue 4,
All-Union Scientific Research Institute for
Radiation Technology, Atomizdat, Moscow, 1970.

Translated for NSC by Eric Peabody, Leo Kaiser

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USSR

UDC 621.362.2

FRADKIN, G. M., KOLYUKOV, V. M., RACZINSKIY, A. I., KONOTOKOV, B. P., MAKAROV, Ye. A.
"Operational Characteristics of Type 'Beta-1' and (Beta-2) Isotopic Thermo-electric
Generators"

Tr. Vses. n.-i. in-ta radiats. tekhn. (Works of the All-Union Scientific Research
Institute of Radiation Technology), 1970, vyp. 4, pp 351-359 (from RZh-Elektritekhnika
i energetika, No 9, Sep 70, Abstract No 9A150)

Translation: The "Beta-1" and "Beta-2" experimental isotopic thermo-electric generators are designed for supplying electric power to ARMS-II automatic radiometeorological stations. The basic parameters of the "Beta-2" are given in the accompanying table. The generator is operationally reliable. The service life is set at five years or more. Eight illustrations, bibliography of two titles.

Abstract includes table on p A-20: Наполнитель = filler; Аргон = argon;
 $T_{окр}$ = ambient temperature; в = volts; вт = watts; $Z_{вн}$, Ω = internal impedance,
ohms; R_L , Ω = load resistance, ohms. Ксенон = Xenon.

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USSR

UDC: 535.31

VOROB'YEV, K. I., KARPENKO, S. G., KOROTKOV, E. A., and POGORELOV,
V. Ye.

"Electro-Optical Modulator Using Barium Titanate"

Tomsk, Izvestiya VUZ--Fizika, No 7, 1973, pp 35-38

Abstract: A fundamental parameter of electrooptical modulators is the controlling critical intensity of the electric field to provide close to 100% modulation. In this first article, subtitled "Estimation of the Controlling Critical Intensities," of the series with the general title given above, the authors describe research to determine these critical intensities for a BaTiO₃ crystal for various mutual orientations of the crystal's optical axis, the vector of the controlling field intensity, and the vector of the modulated radiation wave, for the cases of linear and square electro-optical effect. The phase shift between oscillations in the two beams propagated in the crystal is determined for various directions of the external electric field in the linear effect, and a table of the results obtained in investigating the linear effect is given. It is concluded that the linear effect in the BaTiO₃ crystal should be good for modulating lasers operating in the visible spectrum.

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- 88 -

chenko, Kiev, USSR). *Izv. Akad. Nauk. Ukr. SSR, Ser. Fiz.* 1970, 13(1), 55-9 (Russ.). The luminescence spectrum of the uv-irradiated phosphor PK-4 (88% ZnS-12% CdS-Cu) at 77°K consists of bands at 21,300 (G-band) and 17,700 cm⁻¹ (Z-band). The rise of temp. to 293°K caused a 20-30% or a considerable decrease of intensity of the Z or G band. At 77°K the duration of lighting of the G-band is $\leq 10^{-3}$ sec whereas the Z-emission extinguishes according a nonexponential law in > 10 sec. When PK-4 was excited at a wavelength of 480-580 nm, the intensity of the Z-emission decreased sharply. The phosphor PK-3 (ZnS-Cu) gave bands with max. at 22,300, and 19,200 cm⁻¹. The ratio of the intensities of the bands $\alpha = I_1/I_2$ is 2 times as great as that of PK-4. One band only, with a max. at 21,300 cm⁻¹, was observed in the phosphor PK-1 (ZnS-Ag). The shape of the band is independent of the temp., and its intensity decreases 20% in going from 77 to 293°K. The quantum yield of luminescence of the G and Z bands (B_G and B_Z) and the value α depend on the intensity of the exciting light (L): A decrease of a factor of 16,000 in L caused in PK-4 a 2 or 3 fold increase of B_G or B_Z , resp. As a consequence α changed from 2 to 1, in going from L_m to $L_m/16,300$. When the temp. changed from 77 to

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293°K the dependence of the quantum yield on L increased considerably. When L increased the quenching rate of the Z-emission in the 1st stage increased and after 7-9 sec the quenching rates became the same for various L . Equations for calcg. B_a and B_z from the resp. L values were derived, and a good agreement with the expt. was obtained. The total quantum yield of the luminescence and α changed considerably when the ir-bias lighting of wavelength 800-2000 nm was applied. The ir-bias lighting on PK-4 caused a greater decrease of B_z than of B_a . The B_a is changed very little in PK-3, and B_z is decreased more than in PK-4. The intensity of luminescence decreased in PK-1 at moment of the ir-bias lighting by a factor of ~3 at 77°K and ~1.5 at 293°K. The above effects of the ir-bias lighting were attributed to the rearrangement of the vacancy sites between the Z, G, and quenching centers which caused the decrease of the intensity of luminescence and the change in the distribution of the spectral energy. This rearrangement depends on the compn. of the phosphor and on temp.

E. Svatek / YNC

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AT0050504 CHEMICAL ABST. 5-10 VR0139

94966f Effect of temperature, intensity of exciting light, and infrared bias lighting on the luminescence of

USSR

UDC 532.593

KOROTKOV, P. F., LOBANOV, V. S., KHRISTOFOROV, B. D., Moscow

"Calculation of a Water Explosion by Experimental Data on the Cavity Expansion"

Novosibirsk, Fizika gorenija i vzryva, Vol 8, No 4, 1972, pp 558-565

Abstract: Numerical calculations are presented for the equations of hydrodynamics in which the shock wave parameters and pressure in an expanding bubble during an underwater explosion of a spherical charge are calculated by the experimental dependence of the gas bubble radius on time. A comparison of the calculation results for explosions of PETN charges with a density of 0.4 grams/cm³ with the experimental data is presented. By means of the proposed program it is possible to obtain a number of parameters characterizing the effect of the explosion which cannot be determined experimentally at this time. The proposed procedure does not require knowledge of the equation of state of the explosive and can be used for approximate determination of it. For determination of all the parameters characterizing the underwater explosion it was sufficient only to photograph the movement of the gas bubble. The same results can be obtained if the parameters of the shock wave front are given as the boundary condition.

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Masers

USSR

UDC: 621.385:530.145.6:62

KOROTKOV, S. A., KORNEV, O. V.

"A Multiple-Element System for Automatic Leveling With the Aid of a Laser"

Elektron. Tekhnika. Nauchno-tekhnik. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1970, vyp. 9, pp 99-104 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D44G)

Translation: The authors describe an inertialess system for automatically checking the profile of a surface from the position of the center of the beam from a gas laser on a multiple-element photoreceiver. The system determines a local elevation with a precision of ± 1.2 mm at a distance of up to 500 m without cutting off the emitter. Provision is made for recording the measured profile in digital and graphic form.

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USSR

UDC 621.32.004.14:62-533

KOROTKOV, S. V., and CHUGUYEV, G. P.

"Several Questions in the Synthesis of Multichannel Systems Containing One Digital Computer With the Probability Characteristics of Connecting and Disconnecting the Individual Control Channels"

Leningrad, Elementy Tsifrovых Sistem Upravleniya, "Nauka," 1971, pp 3-20

Abstract: The authors examine a multichannel system as a unit, thus making it desirable to establish criteria that will reflect to some degree the properties of the multichannel system and permit such systems to be compared among themselves. They select three questions which they consider to be the main ones in designing such systems: (1) selection of the basic parameters of the digital computer (speed of response and volume of memory); (2) the possibility of minimizing the performance criterion of the entire system; and (3) determination of the probability properties of the periods of discreteness and errors in the individual channels if such minimization takes place. Figure 1 is a schematic of a model for such a multichannel system. These three questions, while not encompassing all problems involved in designing such systems, are discussed and analyzed in detail. The article contains 7 illustrations, 1 table, and 15 bibliographic entries.

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Miscellaneous

USSR

UDC: 537.529:536.422:537.528

KOROTKOV, V. A., NESVETAYLOV, G. A., RAKHUBA, V. K., Minsk

"On Optimizing the Electrical Explosion of Wires"

Kishinev, Elektronnaya Obrabotka Materialov, No 3(45), 1972, pp 35-37

Abstract: The authors study and generalize experimental material on optimizing the electrical explosion of copper wires in water and air. Formulas are derived for determining the optimum wire diameter over a broad range of discharge circuit parameters. A nomogram is constructed for finding the optimum diameter of a copper wire exploded in water. The authors thank A. P. Klimkovich for assistance in doing the experiments.

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1/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--REACTION OF TETRAFLUOROHYDRAZINE AND NITRIC OXIDE WITH OLEFINS -U-

AUTHOR--(04)-FOKIN, A.V., ZIMIN, V.I., STUDNEV, YU.N., KOROTKOV, V.F.

CCOUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 880-1

DATE PUBLISHED-----70

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OLEFIN RESIN, TETRAFLUOROHYDRAZINE

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STEP NO--UR/0366/70/004/004/0880/0881

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UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NU--APO125740

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. CONDENSATION OF RCH:CHR PRIME1 WITH F SUB2 NNF SUB2-NO MIXT. UNDER PRESSURE GAVE A MIXT. OF F SUB2 NCHRCHR PRIME1 NF SUB2, F SUB2 NCHRCHR PRIME1 N(:O)NF, AND FCHRCHR RPIME1 N(:O)NF (R AND R PRIME1 GIVEN): H, H; AND H, BU. THE PRESENCE OF NO ACCELERATES THE REACTION. WITHOUT NO THE REACTION REQUIRES HIGHER TEMPS. AND PRESSURES.

UNCLASSIFIED

USSR

UDC:669.715.046.54/55

KOROTKOV, V. G., MOKSUNOV, A. M. and SALOKHIN, A. V.

"Refining of Aluminum Alloys with Briquetted Salts"

Moscow, Tsvetnyye Metally, No 2, Feb 74, pp 59-61

Abstract: The use of briquetted salts for simultaneous refinement and modification of aluminum alloys increases the degree of their purification from oxide inclusions and hydrogen, causes the necessary refinement of the structure and reduces the time required for alloy-processing operations. A diagram is presented of a device for charging and dosing of briquettes. The device consists of a hopper with a vibrator, a belt transporter, a pulse-counting relay and a distributing and unloading trough.

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- 31 -

USSR

UDC 669.71.042.61

KOROTKOV, V. G.

"Effect of Alloying Elements on Shrinkage and Mechanical Properties of AL3Ch, AL9Ch, and AL15Ch Alloys"

Usadochn. protessy v splavakh i otlivkakh -- V sb. (Shrinkage Processes in Alloys and Castings — collection of works), Kiev, Naukova Dumka Press, 1970, pp 267-270 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G189)

Translation: The results of studies to discover the effect of alloying elements on density (volumetric weight), shrinkage, inclination toward crack formation, and mechanical properties of cast AL3Ch, AL9Ch, and AL15Ch aluminum alloys are discussed. There is 1 table.

1/1

- 41 -

USSR

UDC 669.721.046.4

POLYAKOV, Yu. A., KOROTKOV, Yu. A., GULYAKINA, A. Ye.

"Processing of Carnallite Powder in Rotating Furnaces"

Tr. Vses. N.-i. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], No 79, 1971, pp 37-42, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G246 by G. Svodtseva).

Translation: A method is developed for processing powder by briquetting and charging the briquettes into a furnace together with the initial carnallite. In order to eliminate the possibility of removal of incompletely dehydrated chunks, the briquettes must be made smaller. This is done by briquetting the powder using a roller press with smooth rolls, producing a pressed strip 400-600 mm wide and 4-4 mm [sic -- Tr] thick. As it leaves the rolls, the pressed strip is broken into chunks of various shapes and delivered to the cold end of the furnace drum. Dehydration of the carnallite and powder occurs practically without changing the quality of the product or increasing the yield of powder from the drum. 8 Biblio. Refs.

1/1

Magnesium

3

USSR

UDC 669.721.046.4(088.8)

REZNIKOV, I. L., POLYAKOV, Yu. A., KHASIN, L. B., RONYATENKO, V. V.,
KOROTKOV, Yu. A., RUDAKOV, V. A., and DUNAYEV, D. V.

"Method of Dehydration of Magnesium Chloride"

USSR Author's Certificate No 272569, Filed 30/04/68, Published 27/08/70
(Translated from Referativnyy Zhurnal-Metallurgiya, № 2, 1971, Abstract
No 2 G181 P)

Translation: A method is suggested for dehydration of MgCl₂ by fusion. To increase the productivity of the apparatus and improve the sanitary conditions, the initial salt is pressed into a strip under a pressure of over 600 kg/cm², ground, and classified, then the fraction of ground salt over 1 mm in size is melted. The salt melt thus produced is agitated by air.

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USSR

UDC 632.155

KOROTKOVA, O. A., and VOLKOV, A. I.

"Routes of Pesticide Transformations in the External Medium and the Problem
of Residues"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleyev,
Vol 18, No 5, 1973, pp 552-562

Abstract: A review with 104 references devoted to the problem of the ability
of external medium to get rid of the pesticide residues using examples
consisting of chloroorganic, organophosphoric compounds, and derivatives of
carbamic acids. The review also covers the mechanism of their circulation
and the dynamics of residues found in the external medium. It has been
shown to be possible to avoid accumulation of pesticide residues in the
external medium by a planned rotation of individual agents.

1/1

- 17 -

USSR

UDC 621.318.5:621.318.1

Engineers VESELKVA, V.N., KROTKOVA, T.G.

"Magnetic Materials For Sealed Magneto-Controlled Contacts"

Moscow, Pribory i sistemy upravleniya, No 11, Nov 1971, pp 37-38

Abstract: The paper lists the requirements imposed on the contact springs of magneto-controlled contacts (MC) and discusses the alloys (47NK, 47ND, 35NK) for MC developed at the Institute Of Precision Alloys of the Central Scientific-Research Institute Of Ferrous Metallurgy (TsNIIChM), with an increased value of the induction in a 640 a/m field, which assures high-speed operation of such MC and increases their sensitivity. These alloys assure a vacuum-tight durable seal with glass and a coefficient of thermal expansion close to that of glass in the interval from 20 to 500° C. The binary alloy 52H can also be used for MC. The magnetic and mechanical properties of the new alloys developed at TsNIIChM are shown as well as those of 52N. 3 ref. 2 fig.

1/1

USSR

UDC 621.357.7:669.387:669.3-416

GOLOVINA, YE. S., KOCHEROVA, A. V., KOROTKOVA, T. S., BUVHINSKAYA, A. V.,
BONDAREV, V. V., and MALININA, I. G., State Scientific Studies and Design
Institute for Alloys and the Processing of Light Metals

"Electrochemical Process for the Treatment of the Surface a Copper Foil"

Author's Certificate No 338558, filed 16 Jul 70, published 9 Jun 72 (from
Referativnyy Zhurnal -- Khimiya, No 8(II), 1972, Abstract No 8L299P)

Translation: An electrochemical process is patented for the treatment of the surface of copper foil during the preparation of foil-containing dielectrics. This includes the galvanic deposition on the surface of a layer of copper-cuprous oxide from a copper plating electrode. It is improved in that in order to increase the strength of the bond between the foil and the dielectric, the surface is additionally treated cathodically in a solution containing 10-70 g/liter of an alkali metal dichromate. For example, on the surface of a copper foil a microbuffing layer of copper oxide is deposited galvanically from a solution containing in g/liter: CuSO₄,100; H₂SO₄,75; NaCl,0.058; and gelatin; 0.050 -1.000. The process is performed using a D_k of 8 -10 ampes/dm², a temperature of 20 - 23°C for 0.5 -1.0 minutes. The anode is lead. After 1/2

USSR

GOLOVINA, YE. S., et al., Author's Certificate No 338558, filed 16 Jul 70,
published 9 Jun 72

rinsing with running the surface of the foil is supplementarily treated
cathodically in a 7% solution of potassium dichromate at a D_k of 1 - 2 amps/dm²

and a temperature of 20° for 30 seconds. Then the foil is washed in running
water and dried carefully, either by hot air or in a thermostat of 60 + 70°.

2/2

- 19 -

USSR

UDC 547.26'118.07

PETROV, K. A., RAKSHA, M. A., KOROTKOVA, V. P., and SHMIDT, E.

"Synthesis of Alkenylphosphonic Acid Derivatives and Investigation of Their Properties. IV. β -Aldehydophosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71,
pp 324-327

Abstract: Unsubstituted and α -alkylated β -aldehydophosphonates (I) may be obtained by hydrolysis of β -alkoxyvinyl- and β -alkoxy- α -alkylvinylphosphonic acid esters with concentrated hydrochloric acid. The products are colorless or slightly yellow liquids which can be vacuum-distilled with slight tarring; they give a qualitative reaction with fuchsin-sulfurous acid. (I) reacts energetically with sodium di-cyclohexylphosphite, forming sodium dialkyldicyclohexyl- α -alkyloxyethylenediphosphonate. To obtain (I), 3.6 g of concentrated HCl is added to 31 g of diethylester of ethoxyvinylphosphonic acid, heated for 30 min at 70-80° and fractionated under vacuum.

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Acc. Nr.: AP0046776

Ref. Code: KR0113

USSR

UDC 629.113.029;629.113.073

KOROTONOSHKO, N. I., Candidate of Technical Sciences, SHUKLIN, S. A., Candidate of Technical Sciences, and EZRCKHI, KH. L., NAMI [Abbreviation unknown], Krasn-chuk Auto Plant

"Effect of Some Constructional Parameters on the Roadability of Full-Drive Automobiles"

Moscow, Avtomobil'naya Promyshlennost' (Motor Vehicle Industry), No 1, 1970,
pp 13-15

Translation: Changes in the design of the three-axle motor vehicle KrAZ-255B considerably expanded the sphere of its efficient use in comparison with the motor vehicle KrAZ-2143. The four-axle design of the NAMI-35M motor vehicle ensured a decrease in axle weights, an increase in tractive potentialities of the motor, better roadability and enabled the obtaining of high speeds under different driving conditions. (3 tables, 3 bibliog. ref.)

Reel/Frame
19790080

18 P/M

1/2 015
TITLE--HYDRAULIC RESISTANCE OF A LAYER OF HYDROLYZED LIGNIN -U-
UNCLASSIFIED PROCESSING DATE--11SEP70
AUTHOR--KOROTOV, S.YA., OPARINA, L.V., SUKHANOSKIY, S.I., AKHMENYA, YE.I.
COUNTRY OF INFO--USSR *K*
SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(1) 11-12
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, BIOLOGICAL AND MEDICAL
SCIENCES
TOPIC TAGS--LIGNIN, GLUCOSE, INDUSTRIAL WASTE TREATMENT, CATION PRODUCT,
HYDRAULIC RESISTANCE, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0211

STEP NO--UR/0328/70/023/001/001/001?

CIRC ACCESSION NO--APO106867

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106867

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYDRAULIC PROPERTIES WERE DEDO. EXPTL. OF THE UNCOMPRESSED LAYERS OF HYDROLYZED HCL LIGNIN (WASTE PRODUCT OF GLUCOSE MANUF.), HYDROLYZED H SUB2 SO SUB4 LIGNIN, AND CHARCOAL MADE FROM LIGNIN. ALL MATERIALS WERE EITHER GRANULATED OR POWD. IN THE LAMINAR FLOW REGION, THE EQUATION DELTAP EQUALS (W PRIME2-2) LA-D SUBE R SUBE AND IN THE TURBULENT FLOW RANGE, THE EQUATION DELTAP EQUALS (W PRIME2-2 (LA-D SUBE) (A-R SUBE PLUS B) WERE OBEYED; DELTAP IS THE PRESSURE DROP (HYDRAULIC RESISTANCE) THROUGH A LAYER OF THICKNESS L, W IS THE AV. FLOW VELOCITY, RHO IS THE D. OF THE FLOWING GAS, T SUBE IS THE REYNOLDS NO. RELATED TO A IN THE LAMINAR FLOW RANGE BY A EQUALS LAMBDA SUBE AND IN THE TURBULENT FLOW RANGE BY LAMBDA EQUALS A-R SUBE PLUS B, AND D SUBE IS THE EQUIV. DIAM. OF THE FREE SPACES (CANALS) OF THE SOLID LAYER. ALL THE PARAMETERS OF THESE EQUATIONS WERE DEDO. IN THE 5-800 R SUBE RANGE, AND THE CRIT. R SUBE VALUES WERE DEDO.

UNCLASSIFIED

1/2 036

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--SPECTRA OF SLOW NEUTRONS FROM A CONTINUOUS TANGENTIAL REACTOR
CHANNEL -U-

AUTHOR--(05)-GOSHCHITSKIY, B.N., GUSEV, V.V., KONSTANTINOV, L.V.,
KOROTOVSKIKH, P.M., SIDOROV, S.K.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(5), 425-6

DATE PUBLISHED-----70

R

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SPECTRUM, SLOW NEUTRON, GRAPHITE, PLEXIGLASS, MAXWELL
DISTRIBUTION, NEUTRON FLUX, NUCLEAR REACTOR/UJEVVA REACTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0584

STEP NO--UR/0089/70/028/005/0425/0426

CIRC ACCESSION NO--AP0137669

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVENESS OF GRAPHITE AND PLEXIGLAS AS SCATTERERS FOR THE EXTN. OF SLOW N FROM A CONTINUOUS TANGENTIAL REACTOR CHANNEL WAS STUDIED BY OBTAINING ENERGY SPECTRA OF SLOW N FROM THE TANGENTIAL CHANNEL GEK-5 OF THE REACTOR IVV-2. THE N FLUX WAS MEASURED AS A FUNCTION OF THE N WAVELENGTH, THE LENGTH OF THE SCATTERER, AND THE ANGLE OF THE SCATTERER WITH RESPECT TO THE CHANNEL AXIS. THE SPECTRA ARE COMPARED WITH MAXWELL DISTRIBUTION CALCO. FOR T EQUALS 290DEGREESK. IN ALL CASES THE SPECTRA ARE DESCRIBED BY THE SAME ENERGY DISTRIBUTION. THE OBSO. WEAK ABSORPTION OF N IN THE PLEXIGLAS SCATTERER DID NOT AFFECT THE CHARACTER OF THE SPECTRUM, BUT SLIGHTLY DECREASES THE VALUE OF THE N FLUX FOR EACH ENERGY.

UNCLASSIFIED

USSR

UDC: 669.15'74-194:620.181.5

GRIGORKIN, V. I., KOROTUSHENKO, G. V., Lipetsk Branch of the Moscow Institute of Steel and Alloys

"Influence of Carbon on the Bainite Conversion Rate of Iron-Manganese Alloys"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 12, 1973, pp 110-112.

Abstract: Earlier works have observed the growth of alpha-phase crystals during isothermal holding in pure iron, Fe-Ni and Fe-Ni-C alloys and in the bainitic conversion of steel. However, no information is available in the literature on the influence of carbon on the isothermal γ -alpha conversion in Fe-Mn alloys, which was the subject of this article. The alloys studied (Fe + 5.15% Mn; Fe + 5.05% Mn + 0.21% C and Fe + 5.15% Mn + 0.5% C) were melted in an arc furnace, homogenized in a vacuum, heated to 700-720° C, held for two hours, heated to 1100-1150° C, held for 6 hours, cooled to 500-550° C with the furnace, then in air. The ingots were heated to 1200-1220° C and forged into bars, which were heat treated (1050° C, 30 minutes, water). The kinetics of growth of bainite plates were studied during isothermal holding at the 200-500° C temperature interval. The growth rate of alpha-phase plates was approximately 10^{-2} - 10^{-3} mm/sec for the Fe-Mn alloy, 10^{-5} - 10^{-4} mm/sec for

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- 44 -

USSR

Grigorkin, V. I., Korotushenko, G. V., Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 12, 1973, pp 110-112.

the alloy with 0.21% C and $10^{-4}-10^{-5}$ mm/sec for the alloy with 0.5% C.

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USSR

UDC 569.112.227.3

KOROTUSHENKO, G. V., GRIGORKIN, V. I., CHUKHRIN, L. A., MILYAKOV, A. P.,
KUZ'MINA, T. M., KRIVONOSOVA, L. F., Murmansk Marine Engineering School,
Lipetskiy Affiliate of Moscow Institute of Steels and Alloys

"Cavitation-Corrosion Resistance of Chrome-Nickel-Tungsten Austenitic Steel"

Kiev, Fiziko-khimicheskaya Mekhanika Materialov, Vol 8, No 4, 1972, pp 92-93.

Abstract: The author's studied the cavitation-corrosion resistance of type 30Kh14NSV austenitic steels made in a vacuum furnace. The tungsten content was varied between 0.5 and 5%. The tendency of the austenite to form deformation martensite with 50% compression and with cavitation was also studied. The studies were performed in a 3% aqueous NaCl solution. The greater the tendency of the austenite toward the formation of both "volumetric" and "surface" martensite, the higher the cavitation-corrosion resistance. The maximum cavitation-corrosion resistance corresponds to the optimal content of tungsten in the steel, approximately 3%. Further increases to 5% cause the resistance and quantity of "surface" and "volumetric" martensite to decrease significantly. The reason for this maximum on the deformation martensite vs. alloy admixture curve has not been established. The steel with the optimal composition for corrosion-cavitation resistance has com-

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USSR

UDC 569.112.227.3

KOROTUSHENKO, G. V., GRIGORKIN, V. I., et. al., Kiev, Fiziko-khimicheskaya Mekhanika Materialov, Vol 8, No 4, 1972, pp 92-93.

paratively low corrosion rate in sea water. The steel with 3% tungsten therefore has the maximum cavitation-corrosion resistance, superior to that of Kh18Ni10T steel by more than an order of magnitude.

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- 101 -

-- USSR

UDC: 669.15-194:621.785.2

GRIGORKIN, V.I., KOROTUSHENKO, G.V., KAZADZHAN, L.B., and ZAMHAREMKOVA, V.T.,
Lipetsk Branch, Moscow Institute of Steel and Alloys

"Stabilization of Residual Austenite and the Irreversible Friability in Chrome
and Nickel Steels"

Moscow, Izvestiya VUZ -- Chernaya Metallurgiya, No 8, 1971, pp 150-152

Abstract: The results are given of an investigation into the effects of chromium, nickel, and carbon individually on the kinetics of austenite stabilization in steels with various combinations of C, Cr, Ni, Si, Mn, and Ti. There are seven such alloys, and a table of the chemical composition of each is given. The alloys were made in an induction oven, were homogenized for 20 hours at 1200° C, and were forged into ingots weighing 10 kg, which were then roasted. Stabilization kinetics were investigated in dilatometric specimens which were supercooled until the formation of 70% martensite and were then once more heated to 230-450° C and held at that temperature for an hour. The austenitization temperature was 980° C. The amount of austenite and martensite were estimated from the curve plotted on a Kantor dilatometer. It was found that the degree of austenite stabilization increased.

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USSR

UDC: 669.15-194:621.785.2

GRIGORKIN, V. I., et al, Izvestiya VUZ--Chernaya Metallurgiya, No. 8, 1971, pp 150-152

with an increase in the quantity of martensite; hence a structure of 70% martensite and 30% austenite was chosen for the initial analysis. The degree of residual austenite stabilization was determined from the formula $Q = (n - n')/n$, where Q is the degree of stabilization, expressed in % form, n is the quantity of residual austenite, fixed before the temperature stabilization, and n' is the quantity of residual austenite converted to martensite when cooled to room temperature after the temperature stabilization. Experiments made to check the assumption that the interconnection between the stabilization of the residual austenite and the friction can be attributed to the same cause are described. The nature of this cause is not completely clear. Curves are given for the degree of stabilization of the residual austenite as a function of the tempering temperature for the various steel alloys.

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- 85 -

USSR

UDC 576.8.095:615.479.90

KOROTYAYEV, A. I., ASTAPOV, A. A. and KARASEVA, E. V.

"The Physiological Role of Antibiotics and the Mechanism of Their Anti-microbial Action"

Uspheki Mikrobiologii, pp 199-210

Abstract: A review is given of the latest works on the mechanism of action of antibiotics on the microbial cell. In accordance with literature data and their own research, the authors develop an original hypothesis about the biological nature of antibiotics and their role for microbe-producers. It is considered that antibiotics are biological effectors, monitoring the activity of various enzyme systems of producer cells. Thanks to their effector nature, antibiotics in the cells of organisms which are sensitive to them can interact with regulator proteins and cause changes in conformation, which lead to partial inhibition of the specific activity of enzymes or to complete inhibition. The bacteriostatic effect of antibiotics is, as a rule, based on biosynthesis of protein at the ribosome level. It appears that ribosome proteins are carriers of receptors which are sensitive to antibiotics. Attaching antibiotic molecules to such receptors produces a screening effect: due to partial change in the conformation of the protein subunit, the corresponding ribosome sector

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USSR

KOROTYAYEV, A. I., et al., Uspheki Mikrobiologii, pp 199-210

cannot interact with RNA or the anticodon, aminosacyl-S-RNA. Restoration of normal ribosome function after the antibiotics are removed is explained by the reversibility of allosteric protein transfers.

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- 74 -

USSR

UDC: 577.963.3

KOROTYAYEV, A. I., MAKSIMOV, V. F., ORLOV, V. G., SHIRKAYEVA, I. N., and
ASTAPOV, A. A., Kuban' State Medical Institute, Krasnodar

"Unusual Changes in the DNA Content of Some *Escherichia coli* Strains in the
Process of Growth"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 6, 1970, pp 1433-1436

Abstract: The amount of DNA and the rate of synthesis were investigated at different stages of growth of three *Escherichia coli* strains, K-12S, M, and O26. The DNA content of the K-12S strain increased more than threefold at the end of the lag phase as compared with the control. The M strain differed significantly from the K-12S strain in the dynamics of DNA content. At the start of the lag phase, the M strain contained only one-half to one-third as much DNA as the K-12S strain. The E. coli O26 strain was similar to the M strain in this respect. From the start of the lag phase to the stage of logarithmic growth, the amount of DNA decreased by a factor of ~ 2.5. In K-12S, all of the chromosomes replicated completely, whereas in M and O26 the chromosomes did not replicate completely in either the original or daughter cells. As a result, the rate of DNA synthesis was lower in M and O26 than in K-12S, but these experimental results are preliminary.

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USSR

SPEKTOPOV, K. S., KRYLOV, Yu. V., NIKOL'SKAYA, T. V., GROMAKOVSKIY, B. M., and NICHIPOROVICH, A. A., Institute of Plant Physiology imeni K. A. Timiryazev, Academy of Sciences USSR, Moscow

"Changes in Biological and Physiological Properties of Chlorella pyrenoidosa Pringsh. 82 T Cells Cultured in High-Density Cultures at Constant Optical Density"

Moscow, Fiziologiya Rasteniy, Vol 18, No 1, Jan/Feb 71, pp 60-68

Abstract: Chlorella pyrenoidosa Pringsh. 82 T cells were cultured on Tamiya's medium with KNO₃ as a nitrogen source. An increase in the density of the culture up to a certain level had virtually no effect on the productivity per unit of suspension volume, i.e., the system as a whole acquired the character of a "dark" leaf. At the same time, the chlorophyll content of the cells decreased while the potential capacity of their photosynthetic apparatus increased (maximum amount of CO₂ assimilated per mg of chlorophyll per hour under optimum conditions of photosynthesis), i.e., the cells making up the system acquired the character of a "light" leaf. The decrease in chlorophyll content of the cells was highly important for the phytocenosis as a whole because, despite the in-

USSR

UDC 532.582.31

IVANYUTA, Yu. F., KARPEYEV, Yu. N., and KOROVICHEV, B. K.,
Leningrad

"Autooscillating Motions of a Cylinder Towed in a Weakly Aqueous
Polymer Solution"

Moscow, Izvestiya Akademii Nauk USSR, Mekhanika Zhidkosti i Gaza,
No 1, Jan-Feb 73, pp 162-164

Abstract: The action of polymer additions on characteristics of the nonstationary oscillating motion of a towed cylinder, R. number = $3 \cdot 10^3 - 10^4$, was investigated. The cylinder had the possibility of lateral dislocations under the action of the force conditional to the asymmetry of the periodic break-off of the boundary layer. The towing speed, resistance, and the lateral dislocations of the cylinder were registered. Average amplitudes of settled lateral autooscillations and the resistance of the cylinder are shown as functions of its towing speed. The increment of hydrodynamic resistance of the oscillating cylinder is the more the greater the amplitude of oscillations; it is in a freshly prepared solution of polyethylene oxide much lower than in water. Explanations are given for the decrease of the amplitude of autooscillations of the cylinder when towed in weak polymer solution. Four figures, three bibliographic references.

USSR

UDC 661.143(088.8)

BABITSKAYA, R. A., GORODINA, Z. F., ZYTNER, G. G., KOROVICHIEVA, V. R., MAROVSKIY, L. YA.

"Procedure for Obtaining a Luminescent Compound"

USSR Author's Certificate No 312864, filed 18 Aug 69, published 2 Dec 71 (from RZh-Khimika, No 12, Jun 72, Abstract No 12L187P)

Translation: In order to reduce the cost and to obtain luminescent compounds which are efficient with respect to brightness of their luminescence, a group III metal orthovanadate and orthophosphate are used in combination with mixed group II metal orthovanadate and orthophosphate. Various rare-earth elements or a mixture of a rare-earth element and Bi is used as the activator. The activator and Bi are taken in the amount of 0.01-0.2 g/atom per mole of final product. The luminous compound obtained by the proposed procedure corresponds, for example, to the formula: $\text{Me}_x^{2+} \text{Me}_z^{3+} (\text{Y}_{1-y}^{\text{3+}} \text{K}^{\text{0+}} \text{O}_4)^2$.

*zA where Me²⁺ are Ca²⁺ or Sr²⁺ ions with partial replacement by Zn²⁺ or Mg²⁺ ions; the Me³⁺ are Y³⁺ or La³⁺ or Al³⁺ ions; K is a group V element of the periodic system, for example, V; A are the activator ions Sn²⁺ or Eu³⁺ or Sm³⁺ or combined with a sensitizer, for example, Bi; $0.05 < x < 0.5$; $0 < y < 0.5$; $0.01 \leq z \leq 0.2$. In order to obtain the compound, the charge components are 1/2

USSR

BABITSKAYA, R. A., et al., USSR Author's Certificate No 312864, filed 18 Aug 69, published 2 Dec 71

mixed in advance and baked in the air or (in the case of using Sn²⁺) in the presence of a reducing agent at a temperature of 600-1,200° for 2-4 hours. The luminescent compounds obtained are excited by a broad range of UV radiation.

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- 14 -

MAGNETIC SERVICE

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6

KOROVIN, A.M.

UDK 616.8-009.83-071:616.29
52: မြတ်စွာ လေပါယ် ပြန်လည်

DATASTORICS INC. TRADING AS TRUSTEESTATE

100. *Syphon*, Doctor of Med., Sec., Colonez, Yucatan, Mexico.

In appropriate conditions of military preparedness, from 6 to 10 percent of the crew in specialized organizations can be considered reliable for combat purposes. Conversely, there exists also a group of individuals in whom the reliability factor is negligible. According to the author's classification, a number of factors influence the reliability of personnel.

An analysis of each observation on the 200 diameter over
which, statistically, there is a 95% chance of being correct, shows that
there is a 95% chance of a minimum of 100 observations in each
category. This means that the maximum number of categories
with 100 or more observations is 10. The following table gives the
probabilities of having 100 or more observations in a particular
category. It is based on the Poisson distribution. The numbers
are given as percentages. The first column gives the probability
of having 100 or more observations in a category. The second
column gives the probability of having 100 or more observations
in all categories. The third column gives the probability of having
100 or more observations in at least one category.

In the case of each individual, different degrees and types of resistance to the disease may be observed. In some individuals, the disease may be so mild as to go unnoticed; in others, it may be so severe as to cause death. In still others, the disease may be chronic, with periods of remission and exacerbation. The degree of resistance depends on various factors, such as age, sex, heredity, environment, and personal hygiene.

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002201510011-8"

USSR

UDC: 681.335.5

KONTOROVICH, B. I., KOROVIN, A. N., RYABKOV, V. M.

"A Device for Multiplying Analog Quantities"

USSR Author's Certificate No 318951, filed 28 Jul 70, published 27 Jan 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'nyy Tekhniks, No 7,
Jul 72, Abstract No 7B491 P)

Translation: A device is known which contains a phase shifter, modulator, demodulator, and load. The trouble with the device is that the result of multiplication depends on the nature and magnitude of the load. The I/C characteristic is nonlinear, since the charge and discharge circuits of the parasitic capacitances and the filter capacitances are different. The purpose of the invention is to improve the operating precision of the device. The proposed unit uses a demodulator based on a four-transistor bridge circuit. The output winding of the modulator is connected between the pairwise joined collectors, and the load is connected between the pairwise joined emitters of the transistors. The bases of the transistors whose emitters are joined are connected through transformers to the phase shifter outputs. The transformer primaries are connected in series, and their common tiepoint is connected to the joined emitters.

1/1

- 15 -

1/2 029 UNCLASSIFIED PROCESSING DATE--30 OCT 70
TITLE--ANOMALOUS TRANSMISSION OF X RAYS FOR DIVERGENT INCIDENT BEAM -U-

AUTHOR--(03)-KOVEV, E.K., KUROVIN, L.I., EFIMOV, O.N.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 38, NR 2, PP 531-540

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--X RAY SCATTERING, ELECTROMAGNETIC WAVE REFLECTION,
ELECTROMAGNETIC WAVE PROPAGATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0943

STEP NO--GE/0030/70/032/002/0531/0540

CIRC ACCESSION NO--AP0107472

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--APG107472

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE ANALYTICAL FORM OF SOME CHARACTERISTICS OF THE ANOMALOUS TRANSMISSION OF X RAYS FOR DIVERGENT INCIDENT BEAM IS DIFFERENT FROM THE CORRESPONDING EXPRESSION DERIVED FOR THE CASE OF PARALLEL BEAM. IN PARTICULAR, THE EXPRESSIONS FOR THE REFLECTION COEFFICIENT AND HALF WIDTH ARE MODIFIED, WHILE THE INTEGRATED INTENSITY PRESERVES THE SAME MEANING. THE NEW CONTENT OF THE REFLECTION COEFFICIENT MAKES IT POSSIBLE TO USE IT FOR OBTAINING THE INTEGRAL CHARACTERISTICS OF ANOMALOUS TRANSMISSION, CONNECTED WITH DIFFERENT PARTS OF THE STRUCTURE FACTOR. CONSIDERATION OF THE DIVERGENCE OF THE INCIDENT BEAM LEADS TO A GOOD AGREEMENT OF THE EXPERIMENTAL AND THEORETICAL DATA FOR THE CHARACTERISTICS OF ANOMALOUS TRANSMISSION. FACILITY: INSTITUTE OF SEMICONDUCTORS, ACADEMY OF SCIENCES OF THE USSR, LENINGRAD.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--RELATION OF THE SPIN PHONON INTERACTION CONSTANT TO THE SHAPE OF
THE MAGNETOOPTICAL PEAK -U-
AUTHOR--KOKOVIN, L.I.

COUNTRY OF INFO--USSR 

SOURCE--FIZ. TVERO. TELA 1970, 12(3), 945-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SPIN PHONON INTERACTION, MAGNETOOPTIC EFFECT, LIGHT
ABSORPTION, ELECTRON TRANSITION, ELECTRON SPIN, CYCLOTHON RESONANCE,
TRANSITION PROBABILITY, GREEN FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1980

STEP NO--UR/0181/70/012/003/0945/0946

CIRC ACCESSION NO--AP0105054

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105054

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPLANATION IS GIVEN AS TO WHICH PARAMETERS DET. THE FORM OF MAGNETOOPTICAL OSCILLATION IN THE CASE WHEN SPATIAL DISPERSION OF PHONONS IS CONSIDERABLE. ABSORPTION OF LIGHT IS CONSIDERED AS TAKING PLACE DUE TO THE TRANSITION OF AN ELECTRON FROM THE VALENCE BAND ON THE LEVEL WITH N EQUALS 0 WITH SPIN DOWNWARD AND THE MAGNETIC FIELD SUCH THAT THE CYCLOTRON FREQUENCY IS EQUAL TO THE FREQUENCY OF TRANSVERSE OPTICAL PHONONS. IN THIS CASE THE ELECTRON CAN PASS TO A LOWER LEVEL WITH SPIN UPWARD, AND THE PROBABILITY OF THE TRANSITION WILL BE ANOMALOUSLY LARGE, BECAUSE OF A LARGE D. OF STATES IN BOTH LANDAU BANDS. AT LOW TEMPS., WHEN OPTICAL PHONONS ARE NOT EXCITED, THE ABSORPTION COEFF. IS DEVD. BY THE 1 PARTICLE GREEN FUNCTION OF THE ELECTRON.

FACILITY: INST. POLUPROV., LENINGRAD, USSR.

UNCLASSIFIED

1/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--EFFECT OF OPTICAL PHONONS ON THE SHAPE OF THE CYCLOTRON RESONANCE
LINE IN SEMICONDUCTORS -U-

AUTHOR--KOROVIN, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 1995-2004
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHONON, CYCLOTRON RESONANCE, PARTICLE INTERACTION, ELECTRON,
PERTURBATION THEORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2240

STEP NO--UR/0056/70/058/006/1995/2004

CIRC ACCESSION NO--AP0125818

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125818

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THEORY IS DEVELOPED FOR THE SHAPE OF THE CYCLOTRON RESONANCE LINE DUE TO INTERACTION BETWEEN ELECTRONS AND LONGITUDINAL OPTICAL POLARIZATION PHONONS. FOR TEMPERATURES BELOW THE DEBYE TEMPERATURE AND MAGNETIC FIELDS SUCH THAT THE CYCLOTRON FREQUENCY OMEGA APPROXIMATELY EQUAL TO OMEGA SUB0 (PHONON FREQUENCY) THE THEORY PREDICTS A STRONG BROADENING OF THE ABSORPTION LINE (PROVIDING OMEGA LARGER THAN OMEGA SUB0). THE LINE BECOMES MUCH NARROWER AT FREQUENCIES LOCATED AT THE LEFT OF THE TOTAL INTERNAL REFLECTION REGION. THE CASES OF FERMI AND BOLTZMANN STATISTICS ARE CONSIDERED. IT IS SHOWN THAT FOR OMEGA LARGER THAN OMEGA SUB0 THE MASS OPERATOR EMPLOYED FOR DESCRIBING THE LINE SHAPE CAN BE CALCULATED BY PERTURBATION THEORY INVOLVING THE ELECTRON PHONON COUPLING CONSTANT; FOR OMEGA SMALLER THAN OMEGA SUB0 OTHER LINE BROADENING MECHANISMS MUST BE TAKEN INTO ACCOUNT. THE THEORY IS COMPARED WITH AVAILABLE EXPERIMENTAL DATA.

FACILITY: INSTITUT POLUPROVODNIKOV AN SSSR.

UNCLASSIFIED

USSR

KOROVIN, M., Engineer

"Discovery of Microimpurities in Iron-Based Alloys Deoxidized with Silicon"
Vechernaya Moskva, No 43, 20 Feb 73, p 1.

Translation: The Committee for Inventions and Discoveries of the Council of Ministers, USSR registered a significant scientific discovery in the State Register today. The phenomenon, discovered by Professor S. M. Baranov, explains certain peculiarities of the structure and properties of natural alloys based on iron, as well as ancient Damascus steel and many other surprising iron and steel products of the distant past.

Professor S. M. Baranov established that iron-based alloys deoxidized with silicon or produced under conditions of reduction and oxidation, contain microimpurities such as silicon monoxide. This microimpurity is very active and strongly influences all processes of formation of the structure and properties of the solid metal. The degree of its content can explain the surprising properties of the ancient metal products.

1/2

USSR

KOROVIN, M., Vechernyaya Moskva, No 43, 20 Feb 73, p 1.

The discovery is of great scientific and practical significance. The possibility has been experimentally confirmed that it is possible to produce metals both saturated with this impurity and free of it. When certain methods are used for melting and deoxidation, known types of steel and cast iron can be produced with high low-temperature strength, low crack susceptibility, high endurance, better weldability, and other valuable properties.

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- 100 -

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--HYDROGEN ADSORPTION BY PALLADIUM IN HYDRAZINE ELECTROXIDATION -U-

AUTHOR--(102)--KCROVIN, N.V., YANCHUK, B.N.

COUNTRY OF INFO--USSR 

SOURCE--ELECTROCHIM. ACTA 1970, 15(4), 569-80

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC OXIDATION, HYDROGEN, PALLADIUM, HYDRAZINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

POLAROID/FRAME--3002/1130

STEP NO--UR/00307/0/015700470560/0530

CIRC ACCESSION NO--APO123557

2/2 015 UNCLASSIFIED PROCESSING DATE--1340970
CIRC ACCESSION NO--AP0126597
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY DETG. THE POTENTIAL OF THE DIFFUSION SIDE OF THE MEMBRANE AND BY ELECTROOXIDN. OF H DIFFUSING TO THAT SIDE IN CASE OF HYDRAZINE ELECTROOXIDN. ON THE CONTACT SIDE, AS WELL AS BY TAKING THE CHARGING CURVES AFTER HYDRAZINE ELECTROOXIDN., AND MULTIPLE WASHINGS OF THE ELECTRODE, IT HAS BEEN ESTABLISHED THAT IN HYDRAZINE ELECTROOXIDN. PD SORBS H. THE AMT. OF H SORBED CAN INCREASE WITH ANODIC POLARIZATION. H IS PRESENT IN PD AFTER HYDRAZINE ELECTROOXIDN. AT HIGH POS. POTENTIALS (SMALLER THAN OR EQUAL TO 1.0 V). H IS AN INTERMEDIATE PRODUCT OF HYDRAZINE ELECTROOXIDN. HYDROGEN IS PROBABLY PRODUCED AS A RESULT OF DECOMPNS. OF INTERMEDIATE RADICALS FORMED IN HYDRAZINE ELECTROOXIDN. FACILITY: MOSCOW POWER INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 619:616.988.6-097:636.5

KOROVIN, R. N., KREYMER, Yu. Ye., MATYUSHKOV, V. S., LUKINA, V. A., NIKITIN, Ye. Ye., and KUDRYAVTSEV, F. S., All-Union Research Institute of Fowl Diseases

"The Effectiveness of Crude Viral Vaccine Against Marek's Disease"

Moscow, Veterinariya, No 8, 1973, pp 38-39

Abstract: A turkey herpesvirus antigenically related to the virus responsible for Marek's lymphoma was grown in chick embryo fibroblasts and utilized as a vaccine. The efficacy of the vaccine was tested on 1 day old chicks immunized intramuscularly with 500 PFU in 0.2 ml during an epizootic outbreak in Latvia. Mortality due to Marek's disease was 3.2-4.5 times less among the immunized chicks than among the unimmunized controls. Although 100% protection was not afforded the immunized chicks, the economic gains from an effective vaccine are obvious and indicate the importance of prophylactic immunization.

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- 95 -

USSR

UDC 546.811-38+346.832-38

LEBEDEVA, Ye. N., KOROVIN, S. S., TOMILOV, N. P., and PETROV, K. I.

"Study of the Zirconium and Hafnium Hydroxyperchlorates by Means of IR-spectroscopy"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 16, No 3, Mar 71, pp 666-670

Abstract: Infrared spectra were obtained on the crystal hydrates of zirconium and hafnium hydroxyperchlorates containing varying number of water molecules, on deuterated zirconium crystal hydrate and on the compound with a formula $ZrO(OH)ClO_4 \cdot H_2O$. The spectra of corresponding compounds exhibited similarities in the absorption bands with an intensive complex band at 1100 cm^{-1} and another one of medium intensity at $620-630\text{ cm}^{-1}$, both being assigned to the valence and deformation vibrations of ClO_4^- . The spectra of compounds containing 6 or 8 water molecules indicate absence of the coordination of the perchlorate ion. Spectra of $HfO(ClO_4)_2 \cdot 3H_2O$, $ZrO(ClO_4)_2 \cdot 2H_2O$, and $ZrO(OH) \cdot ClO_4 \cdot H_2O$ exhibited definite changes indicating coordination of the ClO_4^- ion with metal cation. No bands were found characteristic of the Me:O group.

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UDC 542.61/00.061

BOL'SHAKOV, K. A., Corresponding Member of the Academy of Sciences USSR, and
KOROVIN, S. S., Doctor of Chemical Sciences

"Use of Extraction During Separation and Parting of Rare Metals"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev,
Vol 15, No 4, 1970, pp 380-387

Abstract: Some of the more interesting practical questions of the parting of rare elements which are similar in properties are considered, and prospects for the further development and application of extraction in the technology of rare elements are discussed. Rubidium, cesium, gallium, indium, scandium, yttrium, and lanthanides are used as examples in showing that extraction can be used to solve complex technical problems. The article considers basic patterns of extraction behavior and the formation of coordination compounds. The behavior of metals in aqueous and organic solutions is explained from the viewpoint of the peculiarities of atomic structure. The qualitative characteristics of the extraction of metals by extractants of different classes are given. It is shown that, in spite of considerable successes in the practical use of extraction, not all possibilities of the extraction processes have been utilized. Further success

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BOL'SHAKOV, K. A., et al, Zhurnal Vsesoyuznogo Khimicheskogo Obschestva imeni D. I. Mendeleyev, Vol 15, No 4, 1970, pp 380-387

will be tied to the expansion of works related to theory, the search for new extractants, the use of mixtures of electrolytes and mixtures of extractants, the development of the processes of recovery of rare metals with organic solvents from pulp and solid products, and the use of organic solutions for producing compounds.

2/2

- 30 -

USSR

UDC: 681.327.12

KOROVIN, V. G., KOTIKOV, Yu. P., REPIN, V. I., SAMORUKOV, V. A., SYSOYEV,
N. V., TEL'NYKH, O. A.

"A Computer Tape-Punching Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tsvarynyye Znaki,
No 13, May 72, Author's Certificate No 335704, Division G, filed 3 Jul 69,
published 11 Apr 72, p 210

Translation: This Author's Certificate introduces a device for punching computer tape. The device contains a perforating mechanism connected to the driven shaft of a single-turn drive clutch. The code electromagnets of the perforating mechanism are electrically connected to the program head of a readout module. The device also incorporates a tape transport mechanism with two geared drive drums and the wheel of a ratchet mechanism fastened on a common shaft. The dog of the ratchet mechanism is connected to the driven shaft of the single-turn drive clutch. As a distinguishing feature of the patent, the working precision of the device is improved by fastening the eccentric of the punching mechanism drive and the crank of a quadric-crank mechanism on the driven shaft of the single-turn drive clutch

1/2